

CURRENT DRUG THERAPY

This series of articles has been arranged by an editorial subcommittee of the C.M.A. Committee on Pharmacy.

Drugs for Eczema of Children

ARTHUR R. BIRT, M.D.,* *Winnipeg, Man.*

DRUGS should be used with extreme caution in the treatment of "eczema" in children. The fewer the medications used, and the less toxic the drugs employed, the better will be the results achieved in the management of these very reactive young people.

Drugs for External Use

The choice of drugs used in local therapy will vary, depending on the presence of low-grade secondary infection manifested clinically by crust formation.

Baths: Oatmeal makes a very useful colloidal bath. It is bland, cleanses the skin and removes scale and crusts. Two cups of fine-ground oatmeal in a cheesecloth bag is cooked for 20 minutes in two quarts of water; this water is added to the bath water and the bag is used as a sponge. Aveeno, a specially milled oatmeal, makes a very satisfactory and more convenient colloidal bath. It is as glutinous and does not require cooking. One cup is sufficient in a tub of water.

Potassium permanganate is the simplest agent for use in the control of secondary infection in eczema. Through oxidation it controls bacteria and it also dries denuded areas. Potassium permanganate solution should be made freshly for each bath, using one drachm of crystals to every six gallons of water (1: 6,000). It should not be used in a good bathtub. If it is used in a tub that does not have any abrasions on its surface, the brown stains can be removed with an ordinary household bleach.

Ointments: Calamine (calamine preparata) is a basic zinc carbonate suitably coloured with ferric oxide. The powder may be suspended in an oily base (linimentum calaminae B.P.C.) or in a greasy base (unguentum calaminae B.P.C.) and offers an inexpensive, bland application for the treatment of eczema. It is preferable not to add sensitizing counterirritants.

Crude coal tar (pix carbonis), a distillation product of coal, has been used empirically and with good results for many years. Two per cent crude coal tar in zinc oxide ointment is used commonly. It may produce a folliculitis in hairy areas, or if applied to more than one-third of the body at one time may produce a toxic effect on the kidneys.

Other distillation products of coal tar have been tried to avoid the dark colour and staining of crude coal tar but they have not proved to be as effective. Zetar, a colloidal solution of crude coal tar, is a useful substitute. It is nearly as effective, has the same dark colour but does not stain as much and is used in the same percentage as crude coal tar.

The cortisone analogues offer the most useful form of local therapy of eczema. It is wise to choose and adhere to one, or at the most two, and become familiar with their action. No measurable systemic effects are evident from the application of hydrocortisone to the skin, but the fluorohydrocortisones may produce systemic effects, particularly if the area of application is covered with Pliofilm. Because they are relatively expensive, special consideration should be given to the manner in which they are prescribed. Nothing frustrates a tired mother more than to arrive home from a visit to the doctor with a small tube of expensive ointment beautifully packaged in a tiny "jewel case", and then to be confronted with the problem of trying to apply it to a crying baby literally covered with eczema.

There is no apparent arithmetic relationship between the amount of corticosteroids used in an ointment and the results that are obtained in individual cases. Very often small amounts of the drug will produce the desired effect at a reasonable cost. The corticosteroids are usually prescribed in a hydrophilic ointment base such as Dermabase or Unibase. Hydrocortisone 40-80 mg. to the ounce often gives a satisfactory result at much less cost than the usual 1-2.5% ointment. Similarly, 15 g. of triamcinolone ointment, .1%, can be diluted to make 2 oz. with hydrophilic ointment base and be clinically very efficacious. If crusting is present, Vioform (iodochlorhydroxyquinoline), an antimicrobial agent, may be added to the ointments mentioned above in the strength of 250 mg. to the ounce. This will stain white linen yellow. Alternatively, neomycin sulfate, 150 mg. to the ounce of ointment, may be added. It may produce some cutaneous sensitivity.

The sulfonamides should not be used in the local therapy of eczema in children.

Drugs for Internal Use

In my opinion it is practically always wise to avoid the oral administration of the corticosteroids to children with eczema. While they give tem-

*Assistant Professor of Medicine (Dermatology), University of Manitoba; Dermatologist, Children's Hospital, Winnipeg, Manitoba.

porary relief from symptoms, they do not offer a permanent answer to the problem, and are apt to produce many undesirable physiological effects. To start prescribing them is often an admission of defeat by the attending physician, and poses a very difficult situation for the next physician when he is asked to take over the case.

Antihistamines have a limited use in the treatment of eczema. Their main benefit seems to be associated with their sedative effect. Benadryl (diphenhydramine hydrochloride) is particularly useful in this manner in children.

Sedatives should be used very cautiously in children. The barbiturates have a high potential

for sensitization and can cause addiction. The tranquillizers do not appear to have any merit over the older sedatives in this type of patient.

If systemic antibiotics are required, the tetracyclines are the safest agents to try. Chloramphenicol (Chloromycetin) should only be used if there is a very specific indication, because of its ability to produce agranulocytosis. Declomycin (demethyl-chlortetracycline) should not be used in the summer because of its potential of producing photo-toxic reactions. Penicillin is often used because it is less expensive. It should only be prescribed with full knowledge of its ability to produce sensitiza-tion.

SHORT COMMUNICATIONS

A Radioiodinated Azo Dye with Affinity for Amyloid:

A Preliminary Report

MICHAEL KAYE, M.B., F.R.C.P.[C],* J. R. JAMIESON, B.Sc., M.A., Ph.D.,†
and J. G. FRASER, M.D.,‡ *Montreal*

IN THE course of a clinical study of renal amyloid disease¹ it was noted that the Congo red test was of dubious value in the diagnosis of this disorder. The use of radioactive-labelled dye was considered and believed advantageous for the following reasons: (1) Tracer doses could be used and saturation of amyloid deposits would be unlikely. (2) Surface counting would be possible and localized amyloid disease could be detected even when the amount of amyloid present was small.

Labelling of Congo red with radioactive iodine destroys the dye's affinity for amyloid. A systematic survey of the major chemical dye compounds was therefore undertaken, using thin paraffin sections of an amyloid-laden spleen from a patient as test material. The sections were stained for three seconds in a 1% solution of the dye, washed and then mounted without any decolourization. It was found that the only compounds with affinity for amyloid comparable to Congo red were water-soluble disazo dyes of the type $E \leftarrow D \rightarrow E$, where D is usually benzidine or, less commonly, either o-tolidine or o-dianisidine (Fig. 1) and E is a naphthol or amino-naphthol sulfonic acid. Derivatives of benzidine such as chlorohydroxybenzidine or dihydroxybenzidine inhibited affinity for amy-

ABSTRACT

Investigation was undertaken to produce a radioactive material with affinity for amyloid tissue. Studies of a number of major dyes using paraffin histological sections of an amyloid spleen as test material showed that the only compounds with marked affinity for amyloid were water-soluble disazo dyes of the type $E \leftarrow D \rightarrow E$, where D is usually benzidine, o-tolidine or o-dianisidine, and E is a naphthol or amino-naphthol sulfonic acid. Substitution of an amino or a hydroxyl group in position 1 of the naphthalene nucleus caused loss of staining affinity. It was found that trypan blue could be radioiodinated at position 8 using the Sandmeyer reaction, and the labelled dye showed excellent staining and radio-autographs of the test amyloid section. Metabolism of the tagged dye using 10-200 $\mu\text{g./kg.}$ in animals showed minimal organ uptake, except for the liver which accumulated 30-40% of the injected dose by the end of four days. Use of this material in the diagnosis of human amyloid disease is being explored.

*Assistant Physician, The Montreal General Hospital, Montreal.

†Charles E. Frosst & Co., Montreal.

‡Research Fellow, Renal Laboratory, The Montreal General Hospital, Montreal.

loid, but this was counteracted by hydroxyl or amino groups in position 8 on the naphthalene